

Claims

1. An integral volume control and switch assembly comprising
 - a base plate being penetrable by first and second conductive switch legs, the base plate further supporting a resilient conductive member adapted to establish an electrical connection between the first and second conductive switch legs in a first switch state of the assembly, and adapted to break said electrical connection in a second switch state,
 - a variable resistance means responsive to an angular position of a rotatable member, the variable resistance means being electrically connected between third and fourth conductive legs, and
 - a resilient tactile member adapted to provide a tactile feedback to a user at a predetermined angular position of the rotatable member, to indicate to the user, a change between the first and second switch states,

wherein the resilient tactile member and the resilient conductive member are formed by separate members.
2. An integral volume control and switch assembly according to claim 1, wherein the resilient tactile member and the resilient conductive member are spatially separated along a rotational axis of the rotatable member.
3. An integral volume control and switch assembly according to claim 1, wherein the resilient conductive member and the switch legs constitute separate members.
4. An integral volume control and switch assembly according to claim 1, further comprising an intermediate link rigidly connected to the rotatable member, the intermediate link comprising a protrusion being adapted to engage with the resilient conductive member so as to either establish or break the electrical connection between the first and second switch legs.
5. An integral volume control and switch assembly according to claim 1, further comprising an intermediate housing part being rigidly connected to the base plate, the intermediate housing part having a top portion aligned with the base plate, wherein the top portion supports the resilient tactile member.

6. An integral volume control and switch assembly according to claim 5, wherein the top portion of the intermediate housing part comprises an indentation for guiding a first part of the resilient tactile member.
- 5 7. An integral volume control and switch assembly according to claim 1, wherein the rotatable member comprises at least one protrusion adapted to engage with an engaging part of the resilient tactile member.
8. An integral volume control and switch assembly according to claim 7, wherein the first
10 part of the resilient tactile member is substantially U-shaped, and wherein said first part is substantially perpendicular to the engaging part.
9. An integral volume control and switch assembly according to claim 7, wherein the at least one protrusion of the rotatable member is adapted to engage with the resilient tactile
15 member so as to provide an audible feedback signal in addition to the tactile feedback.
10. An integral volume control and switch assembly according to claim 7, wherein the predetermined angular position of the rotatable member is different from an angular position of the rotatable member causing the resilient conductive member to switch
20 between the first and second switch states.
11. An integral volume control and switch assembly according to claim 7, wherein the predetermined angular position of the rotatable member is substantially equal to an angular position of the rotatable member causing the resilient conductive member to
25 switch between the first and second switch states.
12. An integral volume control and switch assembly according to claim 4, wherein the resilient conductive member comprises a first part adapted to engage with the protrusion of the intermediate link.
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13. An integral volume control and switch assembly according to claim 1, wherein the resilient conductive member comprises a detent spring manufactured in a material selected from the group consisting of: stainless steel, spring steel, low carbon steel, metallic alloys and Palladium alloys.
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14. An integral volume control and switch assembly according to claim 1, wherein the resilient conductive member is manufactured monolithically.

15. An integral volume control and switch assembly according to claim 1, wherein the resilient tactile member comprises a detent spring manufactured in a material selected from the group consisting of: stainless steel, spring steel, low carbon steel, and Palladium alloys.

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16. An integral volume control and switch assembly according to claim 1, wherein the resilient tactile member is manufactured monolithically.

17. An integral volume control and switch assembly according to claim 1, further
10 comprising a user operable knob connected to the rotatable member, the user operable knob comprising means for providing friction with a user's finger.

18. An integral volume control and switch assembly according to claim 1, wherein the base plate is manufactured in a material selected from the group consisting of: heat resistive
15 thermoplastics, insulating ceramics, LCP, PVC, PE, PP, and Polyetheretherketone.

19. An integral volume control and switch assembly according to claim 5, wherein the intermediate housing part is manufactured in a material selected from the group consisting of: insulating ceramics, PVC, PE, PP, and Polyamid.

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20. An integral volume control and switch assembly according to claim 1, wherein the variable resistance means comprises

- a substrate supporting a conductive path on a surface thereof, wherein a first end portion
25 of the conductive path is electrically connected to the third conductive leg, and

- a slidable contact adapted to slide along the conductive path upon rotation of the rotatable member, the slidable contact further being in electrical contact with the fourth conductive leg.

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21. An integral volume control and switch assembly according to claim 20, further comprising a fifth conductive leg electrically connected to a second end portion of the conductive path.

35 22. An integral volume control and switch assembly according to claims 20, wherein the substrate supporting the conductive path comprises a PCB.

23. An integral volume control and switch assembly according to claim 1, wherein an outer diameter of the assembly is in the range 1-4 mm, preferably in the range 2-3 mm.

24. An integral volume control and switch assembly according to claim 1, wherein a total height of the assembly is in the range 1,5-4,5 mm, preferably in the range 2,5-3,5 mm.
- 5 25. A hearing aid comprising an integral volume control and switch assembly according to claim 1.
26. A portable communication device comprising an integral volume control and switch assembly according to claim 1.